

Patent Abstracts of Japan

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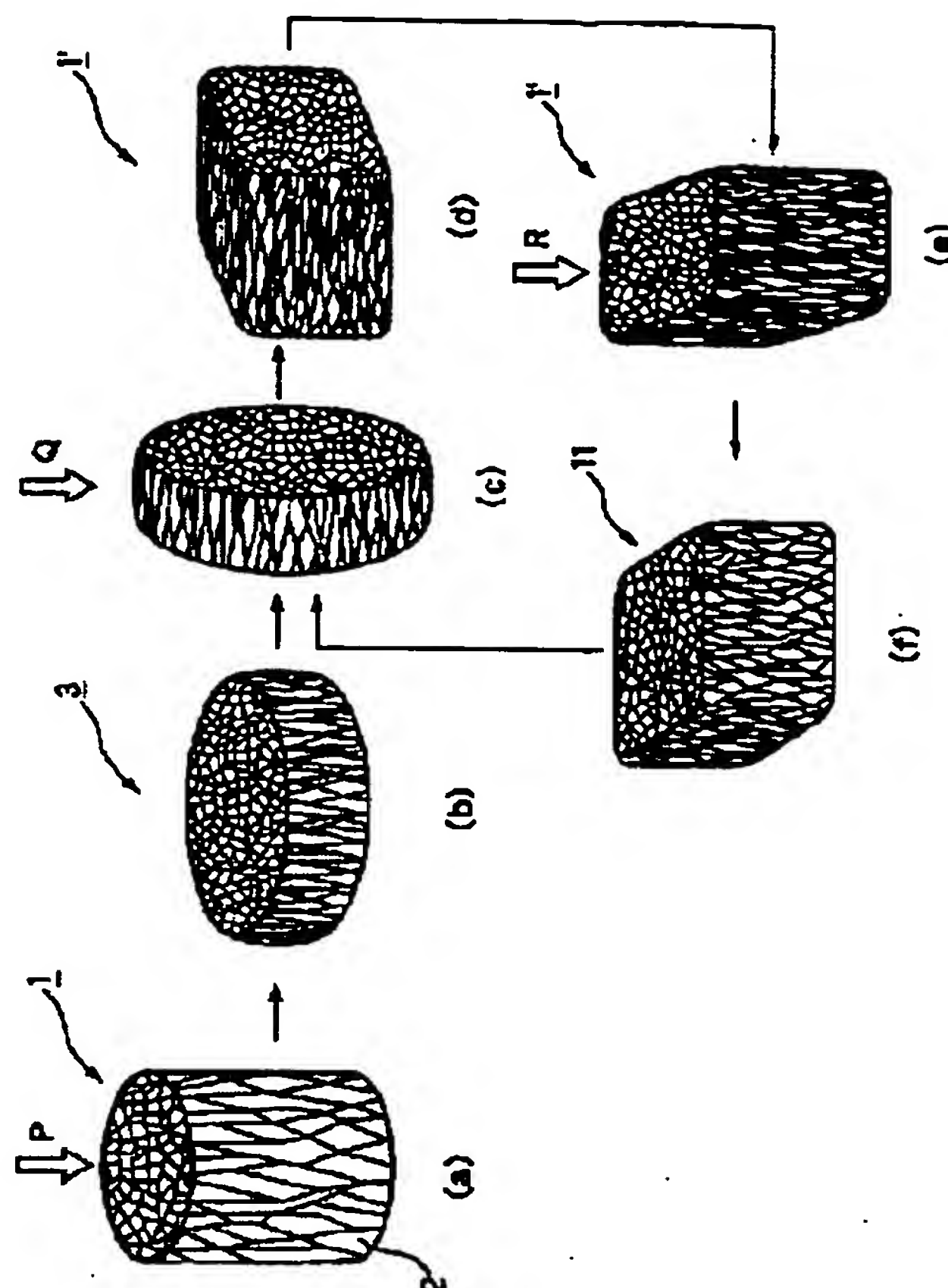
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TITLE : METHOD OF MANUFACTURING FOR  
WORKED BILLET OF HIGH- PURITY  
COPPER HAVING FINE CRYSTAL  
GRAIN



ABSTRACT : PROBLEM TO BE SOLVED: To provide a method of manufacturing for a worked billet of high- purity copper of  $\geq 99.9999$  wt.% purity having fine crystal grains and particularly a method for industrially manufacturing a worked billet of high-purity copper of  $\geq 99.9999$  wt.% purity having fine crystal grains of 10-50  $\mu\text{m}$  average grain size.

SOLUTION: An ingot 1 of high-purity copper of  $\geq 99.9999$  wt.% purity having a unidirectionally solidified structure and heated to 300-500°C is hot forged at least once from a direction (P direction) parallel to the solidification direction of the unidirectionally solidified structure, by which a hot forged body 11 having fine crystal grains is prepared. Water quenching is applied when the temperature of the hot forged body 11 reaches 200-350°C. Then cold working is performed, followed by stress relief annealing at a low temperature ranging from 130 to 170°C.

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